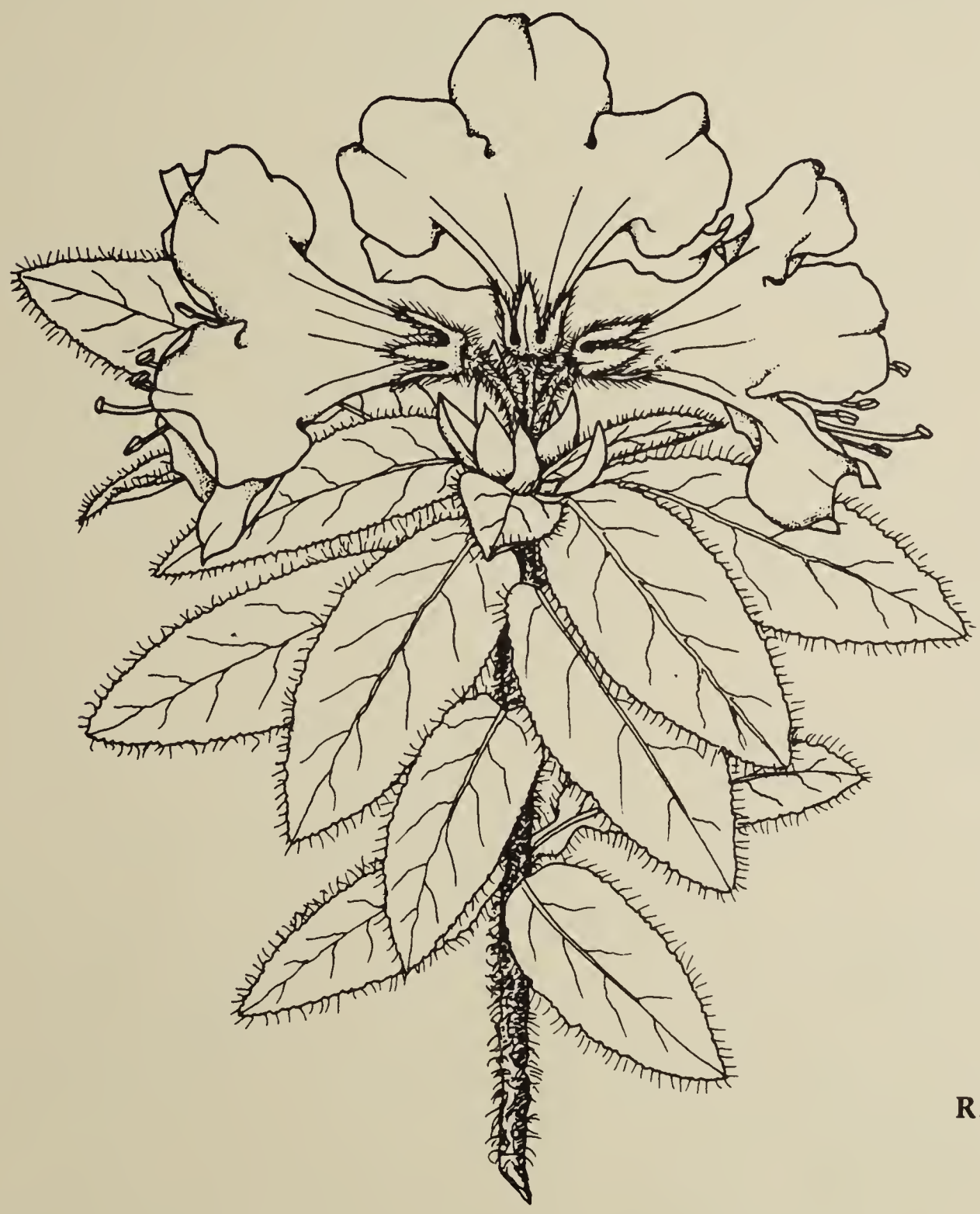
Horticulture Northwest

Journal of the Northwest Ornamental Horticultural Society



R. fletcherianum
nat. size

Volume 10 **Number 2** **Summer 1983**

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Horticulture Northwest

Volume 10 Number 2
Summer 1983

Sallie D. Allen, Editor

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Gardening by the Salt Chuck

Jocelyn Horder, Poulsbo, Washington

While searching for suitable plant material for our new home on the "salt chuck," I found a tremendous amount of information that might be of interest to others who garden on the inland salt-water shores of Puget Sound, Hood Canal and the San Juan Islands. Our property is on Liberty Bay, a protected arm of Puget Sound near Poulsbo. It is an old homestead, about one-and-one-half acres, surrounded on three sides by water. When we moved here three years ago, the land was mostly cleared, except for a few old fruit trees which could not be saved, a 200-foot Pinus monticola (white pine), and a dozen or so Arbutus menziesii (madrona). As the soil was mostly a mucky clay with poor drainage, we brought in sandy soil to form mounds, where we grow woodland plants such as Japanese maples, hemlocks, primulas, ferns and dwarf rhododendrons. Many of our plants are grown from seed collected around the world. The madronas grow on the relatively small area on higher ground where the soil is better; we have added natives--Mahonia aquifolium* (Oregon grape), Gaultheria shallon (salal), Calocedrus decurrens (incense cedar), Pseudotsuga menziesii (Douglas fir) and Rhododendron macrophyllum.

The remarkably even-tempered climate in the Pacific Northwest often is lauded as being nearly perfect for horticulture. We are fortunate in having available a rich assemblage of plants from all over the world that grow happily on our salt chuck. We also have handsome natives such as salal, Oregon grape and madronas that are hardy by the shore and fit easily into the Northwest landscape; some beach gardeners prefer to use these natives almost exclusively. I am sure there are many more plants that would prove successful if they were only tried; more might be successful if given a little protection. Gardeners who want to experiment with new varieties have an almost unlimited choice.

The chief enemy of shore gardens is wind rather than cold. Some plants that are otherwise hardy cannot tolerate constant winds. Although we on inland waters do not have the strong coastal winds of the Pacific or English coasts, we still need to plan for shelter from wind and salt spray. The most successful oceanside gardens are planted with windbreaks, and it would be well for most inland water gardeners to do the same. In our garden we use Arbutus unedo, Garrya elliptica, as well as Quercus phillerοides and Mahonia aquifolium* which withstand salt spray. Some other trees and shrubs suitable for windbreaks are many forms of euonymus, escallonia and juniper. Where wind is a problem, staking of new planting is vital until the roots are well-established. Also, covering the ground closely with mass groupings helps the plants to protect each other and thus to survive more easily; this is nature's way.

Another problem along the shore is soil salinity, which occurs when drainage is poor and salts are not leached out by rainfall. This is not a major problem here in the Northwest as most of our coastal areas have good drainage; with our normally abundant rainfall and some help from garden hoses, harmful salts are leached away. If drainage is poor, the problem is

*Berberis aquifolium

serious. As far as I know, the only answers are to replace all of the soil, which is seldom practicable, or to grow only those few plants that tolerate the salt; or we might make up our minds to enjoy the spot for its view, its remoteness, or its beach. Although we had poor drainage on our penninsula, salinity was not a problem because waves rarely wash over the land in our protected bay. If you believe salinity is a problem in your garden, you may send a sample of soil to the soil testing laboratory at Washington State University; the salinity test should be requested specifically as it is a separate test. If you have an old orchard, you may ask at the same time for a test for arsenic, which was used on fruit trees in early years; arsenic is persistent, but is is treatable.

Good soil is always important, but especially so where plant material will be under considerable stress, as at the seaside. This makes thorough soil preparation and the addition of improvements such as compost a necessity.

Plants with grey leaves are well-adapted for seaside planting. The grey, silver or near-white foliage of artemisia, lavender or cytissus acts as a perfect foil for too much green in the garden, particularly in winter months when there are few flowers. We like the down-white leaves of Artemesia ludoviciana 'Silver King'; this is a joy when combined with Armeria maritima (common thrift). Other grey-leaved plants that do well for us are Rosmarinus officinalis and Elaeagnus multiflora. Quercus garryana grows vigorously near the water. These grey plants actually have green foliage, but they decieve us by growing hairs over leaf surfaces so that light is reflected, giving a grey appearance. On a fine sunny day the leaves seem even greyer, but on a wet day the plants appear dull, as rain darkens the hairs and they reflect less light. Plant hairs, just as with people, tend to become sparse with age so old shrubs often lose the bright glaucus look of youth. We can renew this lovely young foliage by pruning, if the shrub is one that can be pruned. These hairs are what make the plants hardy at the seashore, by protecting against scorching, dehydration and salt spray. In a really exposed position the value of plants with silver, grey or glaucus-blue leaves is enormous.

I found many books on seaside gardening, not all in agreement. Those I find most useful are: **Trees and Shrubs for Western Gardening**, by Gordon Courtright; **Seaside Plants**, by Edward Menninger, thorough but oriented to Florida and California; **Wild Shrubs**, by Joy Spurr, an excellent reference on Northwest natives, many being outstanding in our shore gardens; and Sunset's **New Western Garden Book**, the reference that I use most often, to cross-check my plant ideas for hardiness and availability.

Following is a list of plants that I believe suitable for most shore gardens in our area, except for those with excessive soil salinity, fortunately not too common. Plants included are for the most part those that have been proven hardy on the salt chuck and are available.

GROUNDCOVERS

Arctostaphylos uva-ursi is one of the finest ground covers, rooting as it creeps to 15 feet in width. A. u. 'Point Reyes' is more tolerant of heat and drought than most.

Calluna vulgaris is the true Scotch heather. Garden varieties are far more common than the wild and include ground covers and robust plants up to three feet tall. They all thrive in full sun and that gardener's dream--fast draining soil.

Abronia umbellata (pink sand verbena) is a sweet little native for a sandy spot. Not a true verbena, it has creeping, reddish stems of one foot or more and rose-pink flowers that bloom almost year-round. I have no idea where to find plants or seeds, but I should like to try it.

Parthenocissus quinquefolia (Virginia creeper) is a strong, woody vine with 50 foot runners, usually seen as a ground cover in its native habitat. It is especially beautiful in the fall when the leaves turn scarlet. Beware of planting against wood, as the stems can creep underneath and are difficult to remove. **P. tricuspidata** (Boston ivy) is choice, also difficult on wood. This is the ivy of the Ivy League. There are several new varieties. **Hedera helix** (English ivy) is terribly common, but beautiful and tolerant. Its drawbacks we all know well.

Mitchella repens (partridge berry) is a lovely eastern native that is happy with a little shade. It is slow to spread.

There are over 200 artemisias, with many fine choices. One of the hardier is **Artemisia stelleriana** (dusty miller), a dense two-foot silvery-grey plant with attractive yellow daisy-like flowers. It needs full sun and is drought resistant.

Lavandula augustifolia (formerly **L. officinalis**) is the classic lavender used for perfumes and sachets. It requires full sun and loose, fast-draining soil. The bees love it.

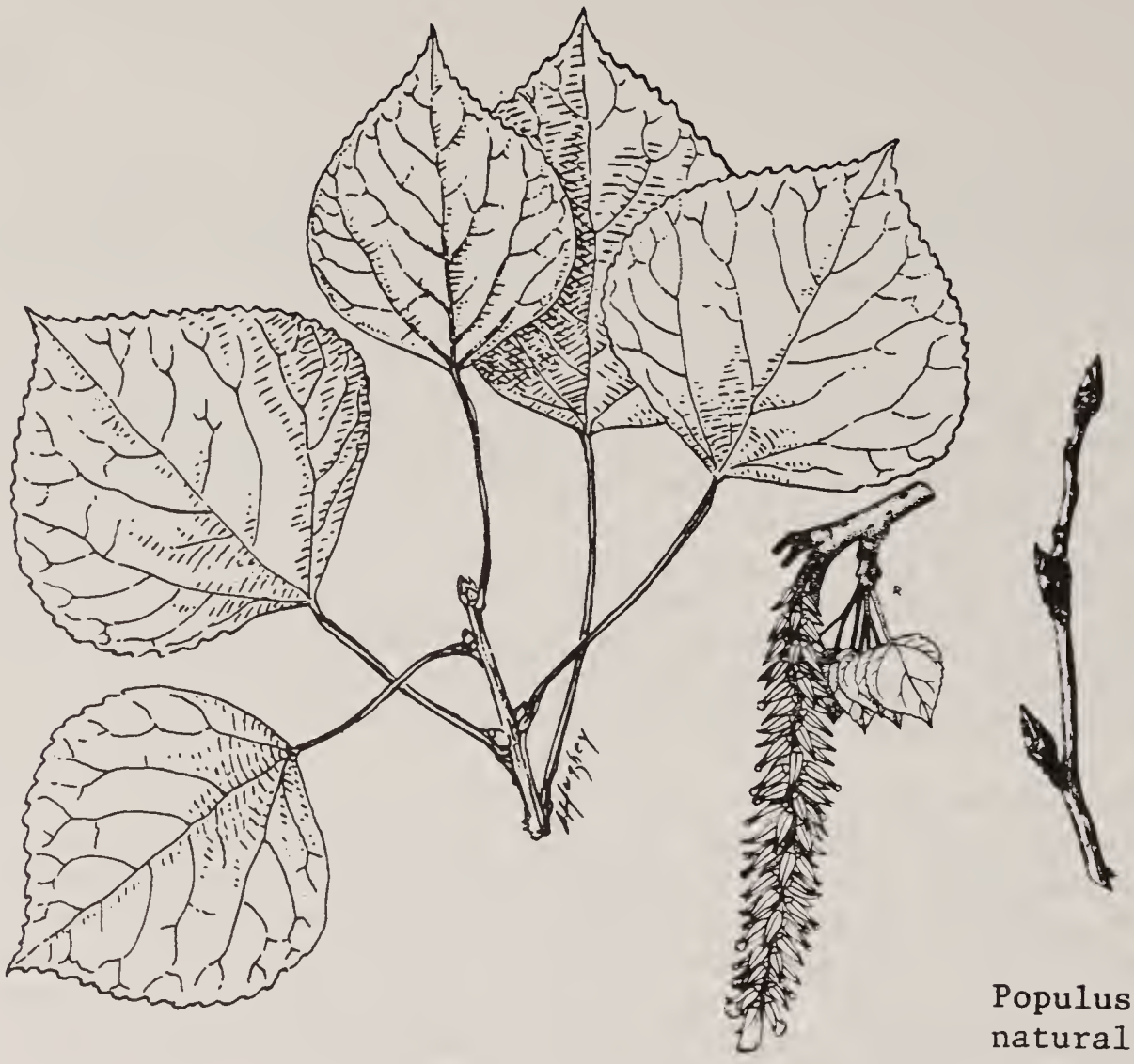
Bellis perennis is the true English daisy, a five-inch perennial with white and rose flowers. Many named varieties are available.

There are many other perennials that are choice, colorful and happy at the seaside, such as calendulas, doronicums and eriogonums.

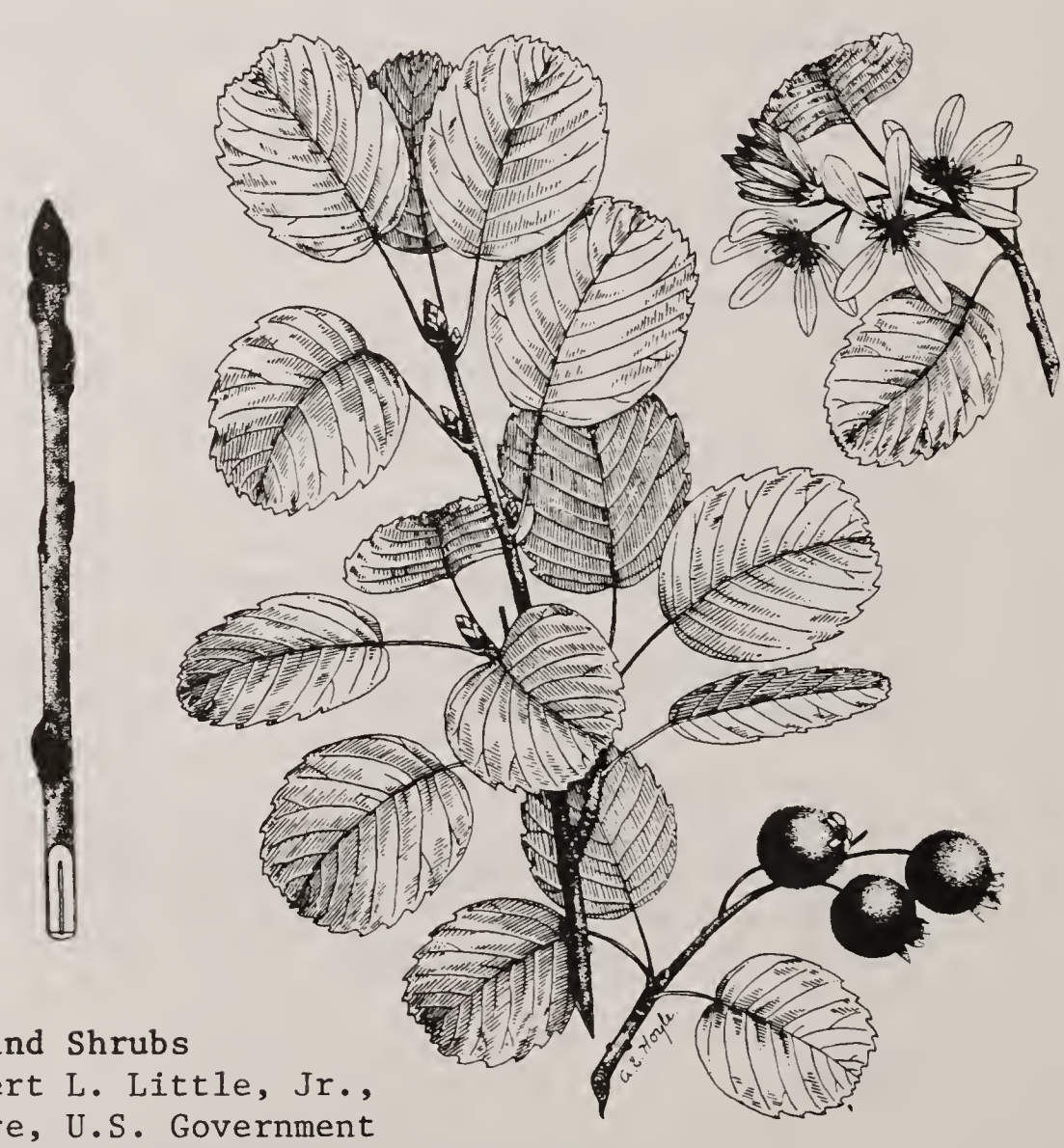
Potentillas are all hardy, like lots of sun and do well in moderately exposed areas. The evergreen **Potentilla nepalensis** 'Willmottiae' is especially good; it grows 10 inches high and one-and-one half to two feet wide. Its branches carry clusters of lovely salmon-pink flowers all summer.

SHRUBS

I have seen **Berberis thunbergii** growing happily right at the shoreline, displaying beautiful color and graceful growth habit. Some



Populus Iremuloides,
natural size. Winter twig
at right.



Amelanchier alnifolia
1/2 natural size. Winter
twig at left.

Reprinted from **Alaska Trees and Shrubs**
by Leslie A. Viereck and Elbert L. Little, Jr.,
U.S. Department of Agriculture, U.S. Government
Printing Office

dwarf forms of barberry may be combined with it to produce a molded hedge of varying height. Shearing will keep it dense, although you will lose the graceful individual branching.

Cotoneasters are evergreen, semi-evergreen and deciduous, and range in height from tight ground covers to stiffly-upright shrubs and trees of 20 feet. They all do best in full sun on dry slopes. They are all tolerant of salt spray and carry heavy crops of berries that birds love. These are some of the best shrubs that we have.

In choosing ceanothus (wild lilac) it is important to stay with varieties tested for our climate, as most are not hardy here. As a group they do not live very long--five to 10 years on the average. As most ceanothus are vulnerable to root rot, good drainage is essential and no summer watering is best. **Ceanothus gloriosus** (Point Reyes) will grow 18 inches high by 16 feet wide. **C. impressus** 'Puget Blue', despite its name, is not reliably hardy, although I have seen it blooming for years in a protected spot. C. 'Blue Blossom' is one of the hardiest of the evergreen ceanothus. C. 'Skylark' is a compact grower with dark blue flowers late in the season.

Cytisus is another salt-tolerant group of shrubs, happy in rocky, infertile soil and dry conditions; sometimes it is too happy for smaller spaces. **Cytisus scoparius** (Scotch broom) has given all brooms a bad name, which is too bad, because there are several less aggressive species in a variety of sizes and colors.

Elaeagnus will tolerate seashore conditions, but some are not completely hardy in the Northwest. It seems to me that of the hybrids **Elaeagnus pungens** 'Fruitland' is especially good, having larger leaves and a more silvery color. The berries on all varieties are lovely and a treat for the birds.

Myrica californica (Pacific wax myrtle) is a low flattened mass at the beach, while out of the wind it can be a shrub of 30 feet, usually with many upright trunks. It is one of our best native plants. It has year-round clean-looking foliage, bears little nutlets attractive to birds, is resistant to drought and insects and can withstand heavy salt spray. What more can you ask of a shrub?

Ribes sanguineum (our native flowering current) is a showy shrub. Nurseries carry several even more spectacular selected varieties and hybrids.

Abelia grandiflora and the hybrid A. 'Edward Goucher' are old-time border shrubs that are covered with pendulous tubular flowers all summer and often during the winter. They should not be sheared, but pruned selectively to the ground, allowing new growth to take a lovely arching growth pattern.

Amelanchier (our native service berry) is a delightful shrub in all its forms. **Amelanchier alnifolia** is especially beautiful with an evergreen background; its dark-blue edible fruits are popular with birds. A. laevis is a small tree known for its striking blooms.

Euonymus japonicus ranks as one of the toughest and most satisfactory evergreens for building a shelter in a tough coastal situation. It is a slow starter, but is propagated easily from cuttings. Its chief virtue is not its beauty, but is longevity and endurance under rough conditions.

There are many good hollies, both evergreen and deciduous, from an eight-inch dwarf, Ilex crenata 'Mariesii' to I. opaca (American holly) which reaches 50 feet. They prefer rich, slightly acid soil, and a moist well-drained situation. Their rich, dark foliage and bright berries make them special. All grow happily on the seashore.

Our native Mahonia aquifolium (Oregon grape) needs no introduction. It is one of the very best, undaunted by drought, salt or wind, ranging from one foot to 10 feet high. Selected named varieties are available.

Photinias are colorful shrubs for screens and backgrounds.

Laurus nobilis (sweet bay) is a fine, large background shrub.

Umbellularia californica (Oregon myrtle) is a fragrant, interesting small tree.

Prunus laurocerasus (English laurel) is a useful small tree or screen, but P. lusitanica (Portugal laurel) takes the wind better and has finer foliage.

If you need a thick fast-growing evergreen up to 15 feet high, Rhamnus californica will do. R. c. 'Seaview' can be kept to 18 inches high and six to eight feet wide if the upright growth is pinched out.

Arbutus unedo, from southern Europe and Ireland, is a cousin of our madrona. The seashore does not bother it at all, although it can be damaged in a severe winter. A. u. 'Compacta' grows only to five feet. An even smaller form, A. u. "Elfin King" is a splendid container plant or show plant for a small garden.

Chaenomeles, the flowering quinces, are easy to grow and quite content by the sea. There are many named varieties in different colors and sizes. Every garden should have one or two.

The marvelous lilacs do well by salt water. There are many, but varieties of Syringa vulgaris, numbering in the hundreds, are probably the best. New plants take two or three years to settle down and produce flowers to full size and color. All like alkaline soil and moderate watering.

Escallonias are fast-growing screen plants that will take direct coastal winds. They may freeze badly at 10 to 15 degrees, but will recover quickly. They are available from three-foot shrubs to small trees of 25 feet.

Koelreuteria paniculata (goldenrain tree) grows slowly to 20 or 35 feet. It is deciduous, with an interesting, open branching pattern. It has yellow blooms in summer in eight- to 14-inch clusters and brown fruit that hangs on late into the winter.

Varieties of juniper are legion, and most grow well on the shore. They are the most widely used woody plants in the West, with a form for every landscape spot and sizes from a few inches to 40 or 60 feet.

Two useful groups of plants I shall mention only briefly, as they are whole studies in themselves. The first is the rose. Our three natives are all interesting, but only **Rosa nutkana** is very showy. The well-known R. **rugosa** will take anything including heavy salt spray; it has many varieties ranging from single to double and white and creamy yellow through pink and deep purplish red; all are wonderfully fragrant. The other group is the rhododendron. There is a hybrid or species here for almost every conceivable spot. However, where soil is high in dissolved salts they need special attention. Also, wind can burn leaf edges, most often on new foliage. Even our own native **Rhododendron macrophyllum** will not tolerate soil salt or excessive wind. Azaleas are more tolerant of seashore conditions.

TREES

Salix babylonica (the common weeping willow) adapts well to the seashore, but needs a lot of room. **S. purpurea** grows only to 10 or 18 feet and has purple branches with long green leaves that are bluish underneath. **S. gracilistyla** grows to 10 feet and has lovely catkins for arrangements. **S. caprea** (French pussy willow) is larger, up to 25 feet; it has flat, inch-long, pinkish-grey, woolly catkins; it forces easily indoors and is marvelous for winter arrangements.

Some hardy pines that will take wind and salt are: **Pinus nigra** (Austrian black pine), **P. resinosa** (Norway pine), **P. sylvestris** (Scotch pine), **P. thunbergii** (Japanese black pine), **P. wallichiana** (Himalayan white pine), **P. banksiana** and several forms of **P. contorta** (shore pine). **P. pumila** (dwarf Siberian pine) is a slow grower to about five feet after many years. The ubiquitous **P. mugo** (mugho pine) is a good landscaping tree. One can find a pine suitable for almost any garden situation.

The genus **Chamaecyparis** includes many choice trees and shrubs that grow well on the shore, such as **C. lawsoniana, C. nootkatensis, C. obtusa, C. pisifera** and **C. thyoides**. All need some protection from heavy salt spray; a few small named varieties need protection from the wind.

Sorbus aucuparia (mountain ash) and its cultivars flourish by the seashore if they have good drainage and adequate water. **S. a. 'Cardinal Royal'** reaches 25 feet and displays magnificient clusters of bright red berries that color early.

Oaks offer many choice species. **Quercus garryana** (the native Garry oak) grows low and shrubby in the wind. **Q. ilex** (Holm oak), from the Mediterranean, tolerates wind and salt air and even can be clipped for a formal hedge. **Q. vaccinifolia** (huckleberry oak) is an evergreen which grows to only five feet. One of my favorites is **Q. sadleriana**, an evergreen from the Siskiyous which grows slowly to five or eight feet. As oaks are difficult to move, they should be planted in their permanent lcoations with room to expand.

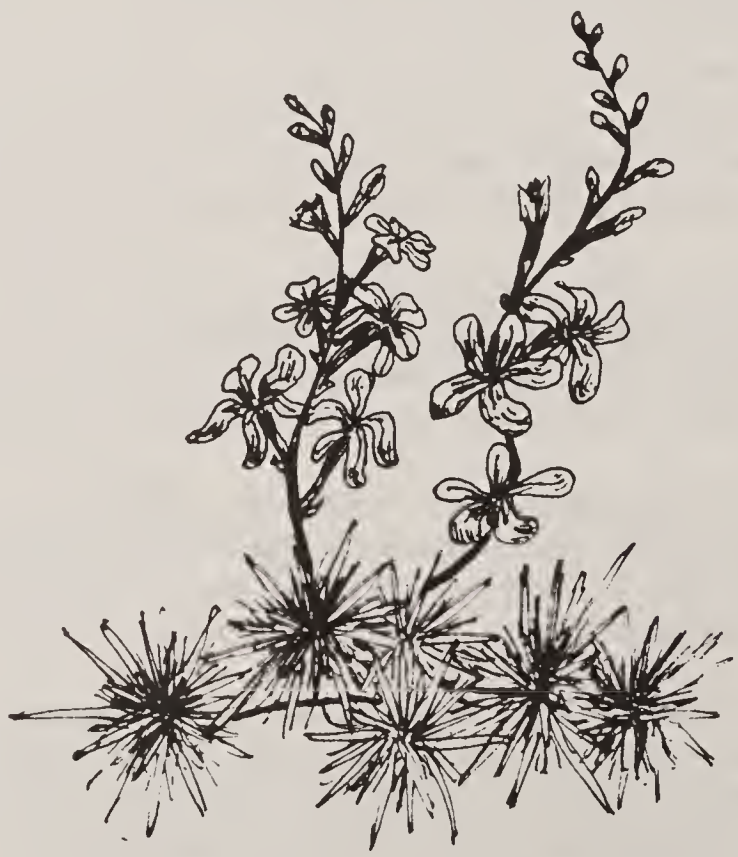
The many varieties of **Fagus sylvatica** (European beech) are handsome deciduous trees that do well on the shore if salts in the soil or water are avoided. Spruces, firs and hemlocks are good subjects, although some take extreme exposure better than others.

Hawthorns are generally tolerant and tough. I hope to find **Crataegus lavallei** (Carriere thorn) which is more erect, more open and less twiggy than others; white flowers in spring are followed by loose clusters of large orange to red fruit that persist all winter, birds permitting.

Poplars are tough and many are beautiful, but most are too large and aggressive for small gardens. **Populus tremuloides** (quaking aspen) is one I would like to try, but I would keep it away from buildings because of its underground rooting system.

There are many, many other trees and shrubs that could be tried by eager beavers who are willing to chance hardiness. And there are all the choice little loves, including many of our own natives, to tuck in among all these shrubs. I feel that there are very few plants that are hardy in the Northwest that will not at least "hang in there," if the basic requirements are provided--proper soil, drainage and protection from excessive wind and salt spray.

Acantholimon venustum
(Plumbaginaceae)
Asia minor



Vernece Larochelle

Rock garden
"sun, sandy soil
rose, 6".

Labrador Tea

Sally Taylor, Edmonds Community College

"The Lord created medicines out of the earth and a wise man will not abhor them." Ecclesiastes

Tea classically refers to those drinks made from leaves of the oriental shrub, **Camellia sinensis** (or **Thea sinensis**). Infusions using other herbal sources are called tisanes. However, in current usage, tea is used to refer to all drinks made from steeping leaves, flowers, seeds, roots, or bark in hot water.

In 1770 there were, in our colonies, store teas and herb teas. Dried leaves, bark, roots, or flowers of at least fifty herbs, shrubs, and trees made hot, aromatic drinks for the patriots. Two plants mentioned in the writings of early explorers were **Ledum groenlandicum** and **L. palustre**, both commonly referred to as Labrador or Indian tea. **L. glandulosum** was called Trapper's tea. In **Wild Teas, Coffees, and Cordials** Hilary Stewart notes that "Eskimos and Indians of Eastern Canada used **Ledum** teas extensively, as did the early explorers, trappers, and settlers, often to extend their limited supplies of imported teas. The immigrants found too that the leaves were effective as a moth and insect repellant. The drink made from **L. groenlandicum** was also known as Revolutionary tea. Other names for **Ledum** teas were Hudson's Bay tea and swamp or bog tea.

The native North Americans of the past had an extensive knowledge of herbs and used them for the prevention of ailments and the treatment of disease, as well as for sustenance. Teas brewed from leaves of **Ledum groenlandicum** have been and are currently used by at least three Indian tribes of Washington State: the Klallam, Makah, and Quinalt.

The Makah term for **Ledum groenlandicum** is bū̄pesbupt; the Quinalt term is nū̄waqwa'nti (prairie tea). The Makah use the same name to describe cranberry, because the two plants are found together. The Quinalt harvested cranberries and Labrador tea leaves in the spruce orchard country above Moclips; the Klallam, in bogs near Port Townsend.

Strong infusions of the leaves were used medicinally as a blood purifier by the Makah and as a rheumatism aid by the Quinalt. Milder infusions were used as a beverage by the Makah. This author is aware of similar current beverage use by the Quinalt. Quinalt tribal member, Agnes Buck, spoke also of the tonic value of the tea. The author was told of a tribal member who, diagnosed as terminally ill by a physician, returned to the reservation and recovered completely after medicinal dosages of Labrador tea.

Ledum groenlandicum is considered by some to be straggly and untidy-looking. Tastes vary, however, and Annora Brown in **Old Man's Garden** describes the plant as "beautiful enough to have been introduced into old country gardens as an ornamental shrub." Many find it an excellent choice for a cool, moist site with acid soil.

In many respects, Labrador tea resembles a small-leaved rhododendron. The resin-dotted, evergreen leaves are thick and leathery with edges rolled under and undersides covered with reddish-brown hair. From May to July fragrant, small, white flowers form round clusters at the tips of branches. Old Man's Garden describes the flowers as follows: "Each individual blossom consists of five white petals with a large green ovary in the centre, the style and numerous long stamens adding to the decorative effect of the flower cluster."

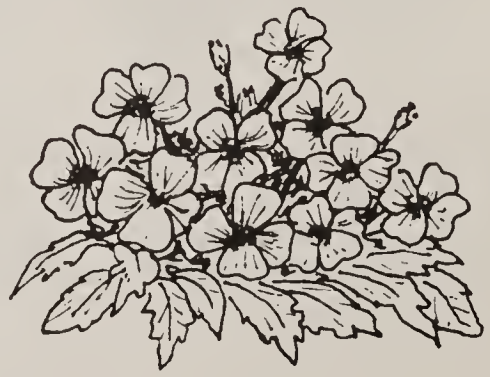
The preferred habitat of Ledum groenlandicum is cold, spongy bog and mucky swamp. It is widely distributed across the northern United States and is known to grow within the Arctic Circle at Point Lake and on the Coppermine River. There it flourishes, but is dwarfed in growth. Both L. groenlandicum Oeder and L. glandulosum Nutt can be seen at the University of Washington Arboretum, as well as in the wild in boggy areas of western Washington.

Leaves are available for picking all through the year. Some people like the young, more tender and upright leaves of Spring, while others prefer to pick the mature ones from October to April. During that time, the leaves are leathery, reddish-brown and hang down from the stem. Harvested leaves must be dried for storage.

Attention! Care should be taken if harvesting leaves. Kalmia polifolia (swamp laurel) and K. microphylla (western alpine laurel), which are both toxic, can be mistaken for Labrador tea. Leaves of neither, however, have the hairy, rust-colored undersides of Labrador tea leaves.

In Wild Teas, Coffees and Cordials we find three methods for preparation of Labrador tea:

> The first is to crush a handful of dried leaves and add to four cups of boiling water. Simmer five to seven minutes.
>
> Another is to use the same proportions and simmer "considerably longer." This is the method observed on the Quinalt reservation, with the tea simmering for several hours. The result is a dark brew similar in taste to English breakfast tea.
>
> The third method is to steep the dried flowers (still the same proportions) for ten minutes. This makes a fragrant tea with delicate flavor. This tisane has relaxant qualities and has been referred to as "North American Valium."



N.O.H.S. NOTES

SUMMER 1983

Supplement to the Horticulture Northwest

Shirley Gorman, Editor

President's Letter

Dear Members and Friends of N.O.H.S.:

I look forward with pleasure to working with the other officers and board members in serving you as President of the N.O.H.S.

Since I have been associated with the N.O.H.S., I have been continually impressed by the variety and depth of the interests and talents of its members. You have the talent to help design and implement tree plantings on streets and freeways and yet you can appreciate the beauty of the tiniest flower; you have the talent to organize plant sales, lecture series and seed exchanges; you have the eye of the artist-photographer in capturing a shaft of sunlight on a dry stalk of fireweed, but, too, you appreciate and support sophisticated research. There is also the talent of interpreting the needs and techniques of growing plants to the novice and the professional alike. But, most importantly, you have the ability to conceive action plans and the enthusiasm to carry them out!

What does the President of such an organization do? Work as hard as he can or stay out of the way--whichever seems to be the most helpful!

Thank you for your confidence.

John Putnam

EDUCATION FUNDS

The NOHS Horticultural Education Fund has now reached a total of $51,877.57.

This sum includes the Memorial fund ($1,636.22), and the Lecture Series fund ($3,109.33).

This year's contributions (to date) have been very generous, amounting to $4,496.50.

Contributors are:

Mrs. Kemper Freeman
The Alfred Clise Agency

Mrs. Walter Wyckoff
Seattle Foundation from Mr. Henry C. Isaacson, Jr.

The R. D. Merrill Foundation
from Mrs. Corydon Wagner

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Membership Application
NORTHWEST ORNAMENTAL HORTICULTURAL SOCIETY

Policy:
To give financial support to the University of Washington Arboreta program and to other horticultural education endeavors.

Membership activities encompass: Lecture Series, Study Groups, Annual Fern and Plant Sales, Tours of gardens of horticultural interest, Horticultural Journal.

(Please fill in form as you wish information to appear in yearbook.)

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City & State_____Zip_____

New Member(date)_____ Or Renewal (date)_____

(Membership renewals will come due January, May and September, Whichever month is closest to date of Membership Application.)

PLEASE MAKE CHECKS PAYABLE TO:
Northwest Ornamental Horticultural Society

MAILING ADDRESS:
University of Washington Arboreta XD10
Seattle, Washington 98195

TELEPHONE: 543-8800

TYPES OF MEMBERSHIP: (Please check one)

___	Life	$500.00
___	Sponsoring	$100.00 to $500.00
___	Supporting	$ 50.00 to $100.00
___	Contributing	$ 25.00 to $ 50.00
___	Active (Individual)	$ 10.00
___	Group or Family	$ 15.00
___	Nursery (Member Listing)	$ 15.00

N.O.H.S. SUMMER JOURNAL 1983

CALENDAR OF EVENTS

July 16 Saturday 9:00 a.m. - 12:00 $8.00	Urban Horticulture Arboretum Courses Information 545-8033 "Gardening in the Shade"
July 23 Saturday 8:00 a.m. $75.00	Plants of the Olympic Penninsula Overnight. Includes transportation and lodging
July 26 and 28 Tuesday, Thursday 7:00 - 9:30 p.m. $25.00	"Summer Cuttings"
July 30 Saturday 10:00 - 2:00 p.m. $12.50	"Plant Photography Workshop"
August 13 Saturday 9:00 a.m. - 3:00 p.m. $18.50	"Outdoor Drawing Workshop"
August 20 Saturday 10:00 a.m. - 2:00 p.m. $15.00	"Container Garden Tour"
September 19 and 26 Monday 1:00 p.m. - 3:30 p.m. $35.00	Landscape Renovation
October 1 Saturday 9:00 a.m. - 3:00 p.m. $35.00	Landscape Renovation (Continued)

WELCOME NEW MEMBERS

ABEL, Mr. and Mrs. Richard (Katherine)
1730 S.W. 90th, Portland 97225

AMERICAN Society Landscape Architects
c/o Rt. 2 Box 219, Vashon 98070

BABBLING Brooks Nursery (Walter Brooks) 941-3854
29814 11th Ave. S.W., Federal Way 98003

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Fern Research in China

K. H. Shing

Institute of Botany, Academia Sinica, Beijing

(This brief report was prepared by K. H. Shing as introductory information for the NOHS Fern Study Group during his visit to the Seattle area in June, 1982. He would like to express his thanks to the NOHS and other American friends for their sponsorship and hospitality. Professor Shing has most recently been at the University of Michigan at Ann Arbor on a six-month grant from the National Science Foundation. As well as visiting other major herbaria in the eastern United States, he has worked intensively in the Michigan herbarium and laboratory to prepare a comparative study of Chinese and North American ferns.)

Like other branches of botany, serious study of modern pteridology in China was not launched until 1927, when Professor Ren-Chang Ching, a member of Academia Sinica and advisor to the Institute of Botany, decided to switch his interest from Chinese dendrology to pteridophytes. There was then no one in China who knew ferns or how to study them.

In 1930, Professor Ching visited Copenhagen and began the serious study of Chinese ferns under the direction of D. Carl Christensen. In the fall of the same year, he participated in the fifth International Botanical Congress at Cambridge. There he met many of the leading pteridologists from the United States, Germany, England and other countries. After the Congress, he stayed at Kew for over a year, not only working on Chinese and Himalayan ferns but also taking photographs of all type specimens of Chinese plants which had been collected by many foreign botanists. This effort laid the foundation for the development of Chinese phytotaxonomy.

After Professor Ching returned from Europe in the fall of 1932, he joined the Fan Memorial Institute of Biology in Beijing (Peking) and devoted himself with great zeal to the cause of Chinese fern study. During the period of Japanese invasion in China he relocated in Yunnan province, collecting and studying the rich fern flora there. After liberation in 1949, he was transferred to the Institute of Botany of Academia Sinica in Beijing as head of the Taxonomic Section, where he has continued his fern study to the present time. Although he is 84 years old, he still works hard eight hours every day. Under his guidance, more than twenty young pteridologists work in different universities and institutes studying ferns.

The first pteridophyte volume of the Flora of China was published by our institute in 1959, and two more volumes are ready for printing. The remaining two volumes are now in preparation. In addition, local fern floras already published include those of northeastern China (1959), Hainan Island (1964), the Qin Ling (Tsinling) mountains of Shaanxi (Shensi) province (1974), and Jiangsu (Kiangsu) province (1980). The work on the ferns of Xizang Autonomous Region (Tibet) will be out by the end of 1982, and many other local fern floras

are in preparation. In 1976 we also published **Sporae Pteridophytorum Sinicorum**, a 414-page volume dealing with 52 families, 174 genera, and over 1,000 species of Chinese pteridophytes.

For the cytotaxonomic study of Chinese ferns, preparation was made as early as 1964; at that time about three hundred species of ferns were introduced into cultivation in the Beijing Botanical Garden. In the following years, work on chromosome counts was successfully launched but unfortunately frustrated by the so-called "cultural revolution." Three hundred well-grown potted ferns were thrown out of the greenhouse in the winter of 1966. However, since the fall of 1978 when A. C. Jermy, director of the Fern Herbarium of the British Museum, visited China and lectured on the biosystematic study of **Dryopteris**, the interest in cytotaxonomy has promptly renewed.

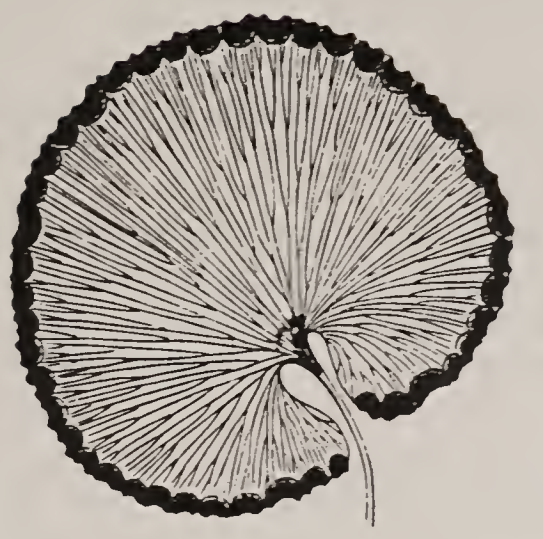
In the last three years we have had three new ferns recorded in China. The first was **Adiantum reniforme**, the simple maidenhair, which was previously known only on the Azores Islands in the Atlantic Ocean. Now, however, we know that it has an interrupted distribution to eastern Sichuan (Szechwan) in China. As there are differences between the Chinese and Azores species in form and indumentum, Lin Yuxin has named the Chinese fern **Adiantum reniforme** L. var. **sinense**. Second, the staghorn fern **Platycerium** was discovered within the border of Yunnan province near Upper Burma. This was the first record of that genus occurring in China. Third, **Phyllitis scolopendrium**, the hart's tongue, was found by a country doctor in the Changbai mountains of Jilin province. His discovery completes the recorded range of distribution of this species from Europe to eastern Asia.

The above facts show that Chinese plant resources must be further investigated, especially in ferns. Because many ferns inhabit special environments such as precipices and ravines, collecting them is very difficult and sometimes dangerous. If one does not have specialized knowledge of ferns, many different ferns appear to be the same species. Because of this, some species have been overlooked in the field.

Our Institute of Botany, Academia Sinica, is a comprehensive facility of about eight hundred people. It is divided into ten departments: phytotaxonomy and phytogeography, phytoecology and geobotany, paleobotany, cytology, morphology, nitrogen-fixation, phytochemistry, photosynthesis, phytophysiology, and the Beijing Botanical Garden. In the phytotaxonomy and phytogeography department, our herbarium is one of the largest in Asia. There are 1,500,000 sheets of vascular plant specimens, of which 130,000 sheets are ferns. .

Next year we will move to Xiangshan, twenty kilometers west of Beijing, where the Beijing Botanical Garden is located. A new building, the Chinese National Herbarium, will be built on the grounds of the garden; it will have available space of ten thousand square meters. Then we can receive botanists coming from different parts of the world to study specimens.

In the past twenty years, although the development of science was interrupted during the rule of the Gang of Four, Chinese phytotaxonomists have done their best. They have edited the **Iconographia Cormophytorum Sinicorum**, which consists of five volumes containing eight thousand species and is a very



Portion of mature Frond, under side.

ADIANTUM RENIFORME.

Portion of mature Frond, under side.

SCOLOPENDRIUM VULGARE.

Reprinted from Ferns: British and Exotic
by E. J. Lowe, 1872

useful manual for identifying Chinese plants. Approximately one-third of the Flora of China has been published. This is an immense task amounting to eighty volumes, scheduled for completion in 1985.

During the last few years we have also paid more attention to biosystematics, from pure morphology to combinations of cytology, biochemistry, genetics, and numerical taxonomy. We have used the scanning electrical microscope to compare the surface structures of spores and pollen grains. We have also begun to introduce computer science into botany.

In addition, we have established exchange relationships with many countries of the world. In 1980, American botanists of the Sino-American Joint Botanical Expedition collected specimens in western Hubei (Hupeh) province in central China. In 1981-1982, several Chinese botanists came to the United States for botanical expeditions and research. With strengthening of the friendship of China and America, we firmly believe that the academic exchanges between our two countries will flourish.

Screening Plants

Brian Halliwell, Royal Botanic Garden, Kew, England

From time to time it becomes necessary to provide a screen to hide some feature within the garden.

To do this, one can use climbing plants which grow quickly and those which provide flowers in the same year as planting are especially useful. For this purpose there are a number of plants which, though perennial, can be treated as annuals, grow quickly producing flowers within a few weeks of sowing. While all can be sown directly where they are to provide screens, development may be too slow and so they can be given a good start by starting off under glass and planting out into permanent position as soon as the danger of frost is past. For climbing plants to be effective screens, some support is necessary which can be fixed to a wall fence or the trunk of an old or dying tree. The soil in such places is likely to be very dry and poor, and in order for the climbing plants to cover as quickly as possible, a good start should be provided by special soil preparation. Dig over the soil working in as much organic matter as can be spared, tread the soil to firm, apply a base dressing at two ounces per square yard and apply water until this has penetrated to 12 inches. Sow seed directly where they are to grow, putting in two or three seeds and thinning to one seedling following germination; allow sufficient space for sideways development before sowing the next group of seeds. The greatest impact is by making your screen of a single plant, but an increased interest will result from using several different kinds; with a mixed screen use plants of equal vigour.

The following are a few plants which can be used for screening. Some searching may be necessary to find a supplier of either seeds or plants. Tropaeolum peregrinum, usually called canary creeper, can make up to ten feet of growth in a season and while it is a single stem when young, when older, side shoots are produced. Leaves whose stems twine onto a support are alternate and grayish about an inch across and divided into five lobes so that they resemble the fingers on the palm of the hand. Flowers are produced in the leaf axils in succession from June or July until the tops are killed by frosts. These are irregular in form and spurred, having two toothed petals larger than the others; canary creeper is equally at home in light shade or full sun. It performs better as a flowering plant in a rather poor soil, for if rich, especially when retentive of moisture, growth can become excessive and coarse with larger leaves hiding fewer flowers. When special soil preparation is not possible, this is the plant to grow.

Eccremocarpus scaber, Chilean glory flower, makes up to ten feet of growth and although there is branching it does not cover a very wide area. There are opposite compound leaves with leaflets arranged in three's and from the end of the leaf stalk is a branched tendril which attaches itself to a support. The flowers are on a one-sided raceme which emerges from leaf axils; each of the flowers is somewhat swollen about an inch in length to be followed by a dry capsule which is wrinkled to split longitudinally to expose dark brown seeds. There seems to be three different flower colors and each form comes true from seed: orange, yellow and red. By mid-summer, the old leaves are beginning to die which produces a rather untidy appearance to the lower part of the plant.

Cobaea scandens, cup-and-saucer-flower, is a very strong grower and can make up to 20 feet of growth in one season; it is equally as vigorous in its sideways development although as the side stems grow upwards if they can find support, it need not be allotted too much space. It has opposite compound leaves and from the terminal end of the petiole is a branched tendril which provides support for its heavy stems. Flowering begins rather late in the summer and in a wet summer or those areas subjected to early frosts the developing flowers can be damaged or destroyed by unseasonal cold. Flowers when they first open are greenish, eventually becoming a purplish blue. They are outward pointing and resemble flowers of Canterbury bell; behind the cup-like bell shaped corolla is an extending calyx which is suggestive of a cup and saucer. According to books bats are said to be the agents of pollenation.

Clematis tangutica can make nine feet in its first growing season. It has light green compound leaves in opposite pairs and has twining petioles which provide support. When raised from seed, in its first year flowering tends to occur late in the summer but the display can last six or more weeks to be followed by fluffy seed heads which will last into the winter. The flowers which are pendant are made up of four downward pointing petals reminiscent of small lanterns; they are unusual in the genus Clematis in being yellow.

Maurandia barclaianum, climbing snapdragon, will make up to ten feet in one growing season, branching quite freely. It has small triangular leaves up to an inch in length and although usually alternate, can be opposite especially on young stems in the spring; it has leaf stems which curl around a support. Flowers are produced in mid-summer which last for six to eight weeks; these which are produced in leaf axils resemble the flowers of an Antirrhinum, hence the common name. Flower color can be variable in any batch of seed ranging from pink through the shades of mauve and purple to an almost pure dark blue, the most desirable color. In most summers, unless exceptionally wet, ripe seed will be produced.

Although all can be treated as annuals they will, in mild districts, be perennials. Clematis tangutica is by far the hardiest and it is only in really cold gardens that it will fail to reappear. Flowering of established plants of this species will occur earlier than in the first year raised from seed.

Cover illustration: **Rhododendron fletcherianum**, another stunning botanical drawing from **The Rhododendron Species**, Volume I, Lepidotes, by H. H. Davidian. Reprinted by permission of Timber Press, Beaverton, Oregon.

Propagation Note

Marge Baird, Bellevue, Washington

1983 Seed Exchange: It is always interesting to know which seed in our exchange was the most popular of the 421 sent in by contributors. The winner (with 11 requests) was **Lewisia brachycalyx; L. oppositifolia** "Placed" and in the "Show" circle were: **Trillium 'Kurubayashi', Dodecatheon conjugens*, Gaultheria nummulariodes, Rhododendron quinquefolium, Arctostaphylos uva-ursi*, Douglasia laevigata*, Fritillaria camschatcensis*, Platycodon grandiflorum 'Apoyama', Primula alpicola Tropaeolum speciosum.**

The Seed Committee was overwhelmed by the generosity of our contributors and is exceedingly grateful for all the work involved. Even though our plant list required twice the paper and printing costs, we more than "broke even!" As for the committee--it is doubtful that we will have trouble getting help! We have so much fun that it may be necessary to put the 'S.R.O.' sign outside the door!

Collect Seed! - Even at this early date, seed is ripening fast. Keep an eye out for something interesting to collect. Send it any time to Marge Baird, 8928 N.E. 33rd, Bellevue, Washington, 98004, 454-3862.

Native Seed: If we are even 50% successful with all the native seed we have ordered from the Exchange, we should have quite a supply of nice little plants for the 1984 Plant Sale. Wouldn't it be wonderful to have a goodly array of small adaptable natives?

* Collected in the wild.

MEMBER'S ATTENTION! GARDENER'S REJOICE!

The University of Washington's CENTER for URBAN HORTICULTURE at Union Bay has been a project near and dear to the heart of the N.O.H.S. since its inception early in 1974. We are delighted to be able to announce that the construction of the headquarters building will begin by mid-August! The building will contain offices, laboratories, lecture rooms, herbarium and the Elisabeth C. Miller Horticultural Library. Completion date is expected to be June, 1984.

Book Review

THE CROCUS, A Revision of the Genus Crocus (Iridaceae) By Brian Mathew, Royal Botanic Gardens, Kew, Published by Timber Press, Portland, Oregon, 1983, $50.00

The Crocus is another in the growing list of thoroughly researched studies by Brian Mathew, the Principal Scientific Officer at the Royal Botanic Gardens, Kew. Comparing Mathew's The Crocus to the long respected Bowles' A Handbook of Crocus & Colchicum is like comparing dusk to dawn.

To the taxonomist it is a detailed study; to the casual gardener it is arranged so that you can easily find the important data.

The amateur gardener and crocus lover will find much pleasure from reading the imaginative history and descriptions of the species; i. e. Crocus chrysanthus, one of the best known. Mathew has answered many puzzles on varieties and hybrids between it and C. biflorus and explains in fairly simple terms why and how there are so many variations. The down-to-earth gardener may read all or none of that and skip to the end of the listing where he will find the basics: flowering period, habitat, type locality, and distribution, to get the bare facts.

If you have purchased your bulbs and are kneeling poised with corm in hand where you will plant them and want to know if you have picked the right spot, perhaps that is where to begin, but you will miss some interesting history if you do not skim through the rest. To the experienced gardener the detailed descriptions will add to the total pleasure of gardening. To the traveler, Mr. Mathew pinpoints the actual areas where crocus grow in the wild and tells the time of bloom so that photographers may have a field day.

Since I am not a taxonomist I cannot speak to the accuracy of Mr. Mathew's botanic descriptions but his reputation should speak for itself. A full identification key, classification of the species and a useful index with synonyms are included.

I found in this book the first reasonable explanation of the difference between **Crocus kotschyanus var. leucopharynx** and the one listed in all our deliveries from Holland as **C. karduchorum** which seemed identical--and is. Mr. Mathew explained where the error crept in.

The 94 illustrations are works of art and cover the whole field of crocus species. Each species has a full page color painting, many rare and unpublished, some from Curtis' Botanical Magazine, and the rest commissioned for this book.

Next fall, when you lay your newly purchased crocus corms beside their corresponding illustrations to compare, note the distinctive tunics covering each bulb. Look carefully at **Crocus vernus** with its woven basket, **C. versicolor** with a tight brown cover, **C. medius** with a crocheted sheath, C. **biflorus** with its distinctive layers in rings, some enclosed in a fish net, some with parallel papery fibers. You will receive added pleasure in learning a little more about the Genus **Crocus.**

Jeanne Gardiner

Book Review

GARDENING: A GARDENER'S DICTIONARY, Henry Beard and Roy McKie, Workman Publishing, April 1982. Price: $4.95.

This soft-covered dictionary for "weedpullers, slugcrushers, and backyard botanists" was missed by many of us when it was published almost a year ago. It is a light-hearted antidote to over-exposure to Hortus I, II, III. If you hate puns and find little humor in the everyday disasters in a gardener's life, then this book is not for you. If your gardenmate is prone to ignore your existence, pouring over nursery, plant, and seed catalogues, slip a copy into the stack. It will bring you instant attention. Who could open it to any page without immediately seeking an audience to whom it might be read aloud. If you have a sick friend, and the doctor's assurance that explosive laughter will not unravel surgical embroidery, this book is a non-wilting substitute to a floral contribution. It will bring the patient extra solicitude as doctors and nurses drop in to sneak a peak.

Listen to this!

"Annual - Any plant that dies before blooming. See Perennial."

"Perennial - Any plant which, had it lived, would have bloomed year after year."

"Garden - one of a vast number of free outdoor restaurants operated by charity-minded amateurs in an effort to provide healthful, balanced meals for insects, birds, and animals."

"Grub - 1. Beetle larva. 2. Your lawn, from a hungry beetle larva's point of view."

"Pest - Any creature that eats green vegetables without being compelled to."

"Seed - Costly, but highly nutritious, form of bird seed sold in handsome packets printed with colorful pictures of flowers and vegetables."

"Urned - what a peony saved sometimes is."

"Zzzzz - 1. Sound produced by a dozing gardener. 2. Sound produced by bee trapped in dozing gardener's pants leg."

.....and on and on and on for 95 hilarious, zany, profusely cartoon-illustrated pages. Enjoy! Enjoy!

- Nan Ballard

Congratulations Betty Miller: At the early competition of the American Rhododendron Society, Seattle Chapter, the Mary and Ted Grieg silver trophy was awarded to Betty Miller for her Rhododendron Chaetomallum, a delightful coincidence in that Betty acquired her plant from the Griegs many years ago. She also won the Sweepstakes Trophy and among the winners were: R. edgeworthii, R. Thompsonii, R. chloranthum, R. 'Ne Plus Ultra', R. fulvoides (R. fulvum) and R. macgregoiae x R. zoellerii.

Tidbits by Ladybug

Tropaeolum speciosum: following the article by Milton Gaschk, in the Spring 1983 issue, I make the following comments:

Seed of some species of Tropaeolum can be short lived and so delay in sowing may be a reason why seed fails to germinate. With most species, self-sown seed germinates freely, whereas dried and packeted seed can be poor or erratic, which suggests that moist storage may be preferable than the more usual dry.

Beautiful as is Tropaeolum speciosum, if it finds a garden which really suits it, it can become an invasive weed. Many years ago I visited a garden in the South Island of New Zealand which had been formerly a Rhododendron nursery. It really was a delightful experience to see bushes festooned with stems of the flame creeper on which were scarlet flowers and bright blue seed. The owner told me that this plant was a major nuisance causing more trouble than couch grass or bindweed. It was a never-ending job, digging out rhizomes of which there were piles all over the garden. A number of fires were burning and were never allowed to go out, which were fed constantly with these roots so as to destroy them. Another "weed" in this garden was Cardiocrinum giganteum of which there were hundreds, if not thousands. Annually these were scythed at or immediately after flowering to prevent seed formation and dispersal.

Here are two plants desired by many gardeners that in ideal conditions can become serious weeds.

Brian Halliwell, Kew Gardens, England

FALL GARDEN TOUR SEPTEMBER 12! NOHS Members and their friends will have the special opportunity to visit "Rosedown" the garden of Roy Davidson and Ferd Minice, described as a natural landscape featuring water, bold foliage and extensive collections of iris, bergenias, hostas and unusual trees and shrubs.

For your reservation make check for $5.00 payable to NOHS Garden Tour and mail to Mrs. James R. Scott, 9103 Lake Washington Boulevard, Bellevue, Washington 98004. Don't forget September 12, 10 a.m. - noon, 2500 Richards Road, Bellevue.

PHOTOGRAPHERS ATTENTION!

Good Ericaceae slides desired for slide library of the Center of Urban Horticulture. Take that extra slide now in the wild or in the garden, in flower and/or fruit.

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